WE CLAIM:

5

15

35

- A method of preventing or reducing neurological events in a subject comprising administering a
 therapeutically effective dosage of a glycosaminoglycan and a serpin to the subject to prevent or reduce
 the neurological events.
- A method of claim 1 wherein the neurological event is associated with emboli.
- 3. A method of any preceding claim wherein the emboli are thromboemboli.
- 4. A method of any preceding claim wherein the serpin is antithrombin III.
- 5. A method of claim 4 wherein the antithrombin III is transgenic antithrombin III.
- 10 6. A method of any preceding claim wherein the glycosylaminoglycan is heparin or low molecular weight heparin.
 - 7. A method of any preceding claim wherein the glycosylaminoglycan and serpin form a complex or conjugate.
 - 8. A method of claim 7 wherein the complex or conjugate comprises antithrombin III covalently linked to heparin.
 - 9. A method of claim 8 wherein the complex or conjugate comprises ATH.
 - 10. A method of any preceding claim wherein the glycosaminoglycan and the serpin are administered prior to, during, or after a procedure that may give rise to a neurological event.
 - 11. A method of claim 10 wherein the procedure affects the central nervous system.
- 20 12. A method of claim 11 wherein the procedure affects the brain and/or cerebral circulation.
 - 13. A method of claim 10 wherein the procedure is a surgical procedure.
 - 14. A method of claim 13 wherein the procedure is cardiopulmonary bypass, cardiac catherization, angioplasty, or endarterectomy.
- 15. A method as claimed in claim 2 comprising reducing emboli in the cerebral circulation in a subject comprising administering an amount of a glycosaminoglycan and a serpin effective to reduce the emboli.
 - 16. A method of any preceding claim for protecting a subject against cerebral embolization comprising administering an amount of a glycosaminoglycan and a serpin that reduces the amount of emboli that reach the cerebral vasculature.
- A method of performing cardiac surgery comprising administering a therapeutically effective amount of a glycosaminoglycan and a serpin peri-operatively to a subject undergoing cardiopulmonary bypass to prevent or reduce the effects of emboli.
 - 18. A method of claim 2 comprising preventing or reducing emboli from a bypassed heart region prior to removal of the region from bypass by administering an amount of a glycosaminoglycan and a serpin effective to prevent or reduce the emboli.
 - 19. A method of using a glycosaminoglycan and a serpin in the preparation of a medicament for the

WO 2005/013884 PCT/CA2004/001497

- 27 -

prevention or inhibition of cerebral embolization.

5

- 20. A method of using synergistically effective amounts of a glycosaminoglycan and a serpin in the preparation of a pharmaceutical composition for preventing or reducing neurological events.
- 21. A method of any of claims 17 to 20 wherein the glycosylaminoglycan and serpin form a complex or conjugate.
- 22. A method of claim 21 wherein the complex or conjugate comprises antithrombin III covalently linked to heparin.
- 23. A method of claim 21 wherein the complex or conjugate comprises ATH.
- A pharmaceutical composition comprising a combination of a glycosaminoglycan and a serpin effective to exert a synergistic effect in preventing or reducing neurological events.
 - 25. A pharmaceutical composition comprising a combination of a heparin or low molecular weight heparin and antithrombin III effective to in preventing or reducing neurological events.